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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,412	11/19/2003	Toshiro Kobayashi	2003-1495A	5320

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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/715,412

Applicant(s)

KOBAYASHI ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2 IDS (see item 2)</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Information Disclosure Statement***

2. The information disclosure statements (IDS) submitted on 11/19/03 and 10/13/05 were considered by the examiner.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "13" has been used to designate both "the current collector" and "the end plate" (see page 17). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 19 (*page 15, 2<sup>nd</sup> full*

*paragraph states that reference numeral 19 is present in Figure 5).* Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 13, 14 (*these reference numerals are referenced in the description of Figure 5*). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
7. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the claims do not include positive step limitations so as to constructively recite how the method for maintenance is being carried out. For instance, absent specific positive step limitations such as "*placing*", or "*removing*" or "*providing*" or

“monitoring” and the like, it is unclear how the intended scope of the stacked fuel cell is further affected or modified by the claimed method. Further clarification or correction is required.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admission of Prior Art (heretofore 'the AAPA') (as discussed in Background of the Invention on pages 1-4 and illustrated in Figures 9, 10a-c and 11).

The present claims concern a stacked fuel cell wherein the disclosed inventive concept comprises the specific partition plates interposed therein.

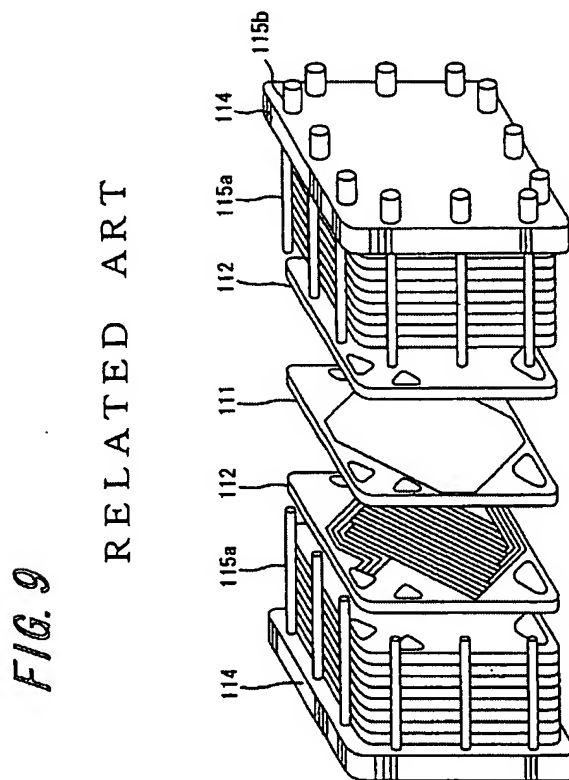
As to claim 1:

The AAPA illustrates in **Figure 9** below a stacked fuel cell comprising many cell films 111 and many separators 112 stacked alternately; the cell films 111 each comprising a solid polymer electrolyte film sandwiched between electrode films; the separators 112 each having electrical conductivity and having a fuel gas channel formed in one surface thereof and an oxidant gas channel formed in the other surface thereof (Applicant's Background of the Invention, paragraph bridging pages 1-2).

**(Emphasis furnished→)** The AAPA reveals that the periphery of the resulting stack is clamped by threaded shafts 115a and nuts 115b via end plates 114. Shafts 115a pass through

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piercing portions (*penetrate through holes or make a way through the holes*) of the many separators 112 interposed therebetween and end plates 114 (Applicant's Background of the Invention, paragraph bridging pages 1-2). *Note that shafts 115a is accommodated at a direction  $\perp$  to the stacking direction of cell films 111 (See FIGURE 9). Shafts 115a and nuts 115b comprise at least the line-shaped fastener. In this case, either the separators themselves or the end plates can be interpreted as the plurality of partition plates.*



As to claim 2:

The AAPA teaches the separators 112 each having electrical conductivity and having a fuel gas channel formed in one surface thereof and an oxidant gas channel formed in the other surface thereof (Applicant's Background of the Invention, paragraph bridging pages 1-2). *In this case, the separators themselves are the plurality of partition plates.*

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As to claim 3:

The AAPA discloses many separators 112 and end plates 114 (Applicant's Background of the Invention, paragraph bridging pages 1-2/ See FIGURE 9). *In the instant case, under a first interpretation, the combination of a separator plate and an plate corresponds to the partition plate and the terminal board, respective. Thus, they acts as first and second members. Under a second interpretation, any separator plate itself may be the end separator and the terminal board. Reason why, applicant's embodiment of Figure 7b contemplates an integrated separator and a terminal board. Thus, the disclosed separator of the AAPA can be taken as the integrated separator and terminal board because there is no specific limitation in claim 3 to require that the separator and the terminal be separated.*

As to claims 4-6:

The AAPA reveals that the periphery of the resulting stack is clamped by threaded shafts 115a and nuts 115b via end plates 114. Shafts 115a pass through piercing portions (*penetrate through holes or make a way through the holes*) of the many separators 112 interposed therebetween and end plates 114 (Applicant's Background of the Invention, paragraph bridging pages 1-2). *Shafts 115a and nuts 115b comprise at least the line-shaped fastener which fast together the cells 111 and separators 112.*

As to claims 7-12:

The AAPA discloses that if any of the cell films 111 is damaged for some cause and needs to be replaced in the stacked fuel cell; the threaded shafts 115a and the nuts 115b are detached and the damaged cell film 111 is replaced by a new cell film 111, whereafter the cell film 111 and the separators 112 are clamped again by the threaded shafts 115a and the nuts 115b



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via the end plates 114. Thus, in this manner, maintenance and management are performed (Applicant's Background of the Invention, page 2, 1<sup>st</sup> full paragraph). *Thus, the AAPA at once envisages fastening the cell films 111, unfastening them if one cell becomes damaged (targeted cell), and replacing (detaching) such a damaged cell.*

Thus, the present claims are anticipated.

### ***Conclusion***

**13.** The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2005/0014057 to Franklin et al discloses and illustrates a fuel cell configuration including many individual cells stacked together.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro  
Primary Examiner  
Art Unit 1745



RAYMOND ALEJANDRO  
PRIMARY EXAMINER